March 13, 1928. 1,662,281

R. W. SCOTT

KNITTING MACHINE NEEDLE

Original Filed May 12, 1922

Fig.1.

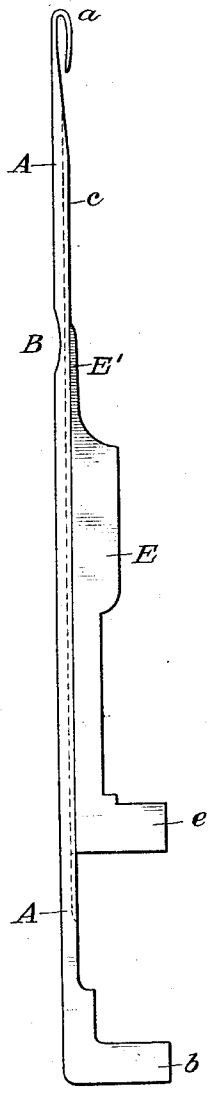


Fig.2.

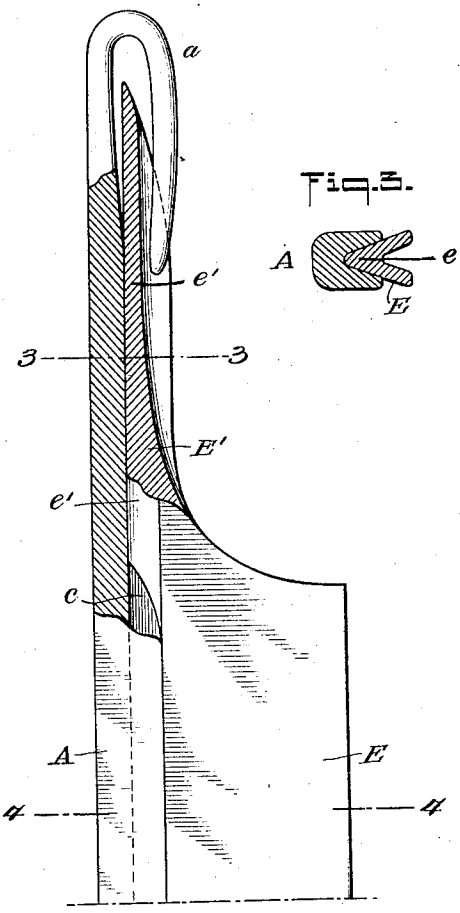


Fig.3.



Fig.4.

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UNITED STATES PATENT OFFICE.

ROBERT W. SCOTT, OF BABYLON, NEW YORK, ASSIGNOR TO SCOTT AND WILLIAMS, INC., OF NEW YORK, N. Y., A CORPORATION OF MASSACHUSETTS.

KNITTING-MACHINE NEEDLE.

Application filed May 12, 1922, Serial No. 560,346. Renewed November 24, 1923.

My invention relates mainly to that class of knitting machine needles in which a sliding latch is used in place of the more commonly used pivoted latch, and one of the objects of my invention is to so construct the needle as to reduce the strain on the loops of yarn in those operations in which loops of the fabric are to be held for a time on certain of the needles while other needles are knitting. This is more particularly important in the knitting of heels and toes of stockings in circular knitting machines.

In the accompanying drawings,

Figure 1 is an enlarged side view of a knitting machine needle embodying my invention, the sliding latch being shown retracted;

Fig. 2 is a view on a still larger scale, and partly in section, of the active end of the needle, the sliding latch being fully projected;

Fig. 3 is a cross section on the line 3—3, Fig. 2;

Fig. 4 is a cross section on the line 4—4, Fig. 2.

The needle A is provided at its active end with a hook *a* and at its rear end with a butt *b* to be acted on by the knitting cams of the machine.

The inner face of the shank of the needle is preferably provided with a longitudinal V-shaped groove *c* in which is guided the sliding latch E, this groove *c* extending along the shank sufficiently to guide the latch in the inoperative as well as the operative positions of the needle. This latch E is provided at its rear end with a butt *e* to be acted on by the knitting cams. The face of this latch E adjacent to the needle A is made at its forward end E′ V-shaped as at *e′* Fig. 2, to fit in the guiding groove *c*, while the same face of the latch back of this part *e′* may be made flat, as shown in Fig. 4. The sliding latch and the needle are made of the same width, as seen in this same Fig. 4, to fit together in the grooves of the needle cylinder.

The longitudinal groove *c* in the face of the shank of the latch may be of any suitable length, so long as it is sufficiently long to receive and guide the V-face *e′* of the latch in the extreme movements of the latter.

The forward pointed end E′ of the latch E is constructed to enter under the point of the hook *a* of the needle A when the latch is projected as seen in Fig. 2, and for this purpose the point E′ is grooved out on its outer face at *e′* to receive the point of the hook *a*.

In Fig. 1, the latch E is shown in its extreme projected position. That occurs in the case of certain of the cylinder needles of a circular stocking knitting machine, when it comes to the knitting of the heel and again at the toe. If the stocking be knit from the top to the toe, the machine is commonly operated when the heel is reached, to elevate about half the circle of needles,—the so-called instep needles,—to a high position out of reach of the knitting cams. These needles then hold their loops on their shanks while the heel pocket is being knitted on the other needles during reciprocating knitting, and certain of these heel-knitting needles are picked out of and into action in the well known manner.

It will be seen that the loops which are being thus held on the shanks of the elevated needles during this knitting of the heel or toe pocket are under considerable strain, and in the case of needles with sliding latches, the point of the latch of each needle is liable to be standing within the loop thus held with the result of increasing the strain thereon, and possibly leaving a row of enlarged loops across the instep of the stocking at that point.

To lessen the strain on these loops, I reduce the dimensions of the shank of each of these needles A at the point B Fig. 1, where the loop would be held, while the needle is thus elevated out of knitting action. This feature of the invention is in the nature of a modification of the construction forming the subject of my reissued Patent No. 15,741 dated January 8, 1924. In the specific form of needle disclosed in that patent, the shank of the needle is so far offset at the loop-holding point that the loop will be held behind the sliding latch. By my present construction, with the sliding latch lying within the loop at all times, I am enabled to use

a shallower needle groove than is possible with the specific construction shown in my said patent.

I claim as my invention—

A knitting machine needle having a shank, having a groove on its inner face and carrying a hook at its outer end in combination with a latch slidingly mounted in said groove, the shank of the needle being reduced in thickness at the back at the point where the loop will be held, while the needle is elevated out of knitting action with the point of the latch within the loop.

In testimony whereof I have signed my name to this specification.

ROBERT W. SCOTT.